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### SOME KANSAS PETROLEUM.

By EDWARD BARTOW and ELMER V. MCCOLLUM, University of Kansas.

Read before the Academy, at Topeka, January 1, 1903.

OUR attention was called to the fact that there must be considerable variation in Kansas petroleum when some specimens differing entirely in character were sent to the laboratory of organic chemistry for analysis. We therefore thought it advisable to collect specimens from various parts of the Kansas oil fields, and to make tests to prove our conclusion that there was a decided variation in the character of the oils from different parts of the field. This paper tells of our observations of the specific gravity, flash point and burning point of eight samples of oil collected in Allen and Neosho counties.

To prevent loss of volatile oils, it is desirable that the samples be collected directly from the wells. Owing to the different stages in the development of the pumping arrangements of these wells, it was not always possible to collect the samples under like conditions. We have noted the conditions of collection below.

We have not included the record of the depth of the wells in this paper, because the height above sea-level and the dip of the strata must also be taken into consideration in order to make an accurate comparison of the depths.

Sample No. 1 was from a well about three miles north of Chanute.

Sample No. 2 was from a well about one and one-half miles east of Chanute.

Sample No. 3 was from a well three miles south of Humboldt. This sample was taken directly from the well by the writer.

Sample No. 4 was from a well two miles north of La Harpe, and had been in barrels exposed to the air for several days before collection was made. The well was new, and had been shot only about ten days.

Sample No. 5 was from a well in the northern part of the city of Humboldt, and was taken from a tank into which it had been pumped. The Engler test showed water.

Sample No. 6 was from a well four miles southwest of Humboldt, and was in part taken directly from the flowing well and part from a barrel.

Sample No. 7 was from a well about a mile west of Humboldt, and was pumped directly from the well.

Sample No. 8 was from the schoolhouse well in Humboldt. The well is primarily a gas well, but some oil collects and must be pumped

at intervals. The oil obtained had been pumped three or four hours before it was secured by the writer.

The following table shows the relative properties of eight samples of oil from Allen and Neosho counties :

No.	Specific gravity.	Baume.	Flash point.		Burning point.	
			Fahren-heit.	Centi-grade.	Fahren-heit.	Centi-grade.
1.....	0.866	32.5	52°	11°	77°	25°
2.....	0.872	31.3	112	39	129	54
3.....	0.940	19.3	289	143	360	172
4.....	0.906	25.	167	75	208	98
5.....	0.912	24.	160	71	241	116
6.....	0.880	30.	52	11	124	51
7.....	0.874	31.	52	11	79	26
8.....	0.875	31.	77	25	124	51

In the above table, we would call attention to the following differences : The specific gravity varies from 0.866 ( Baumé 32.5 ), in No. 1, to 0.940 ( Baumé 19.3 ), in No. 3. No. 3 and No. 5 contain some water, which makes the specific gravity a trifle higher than the dry oil would be.

The flash points vary from 11° C. (52° F.), in Nos. 1, 6, and 7, to 143° C. (289° F.) in No. 3.

The burning points vary from 25° C. (77° F.), in No. 1, to 72° C. (360° F.), in No. 3.

We have also made distillations of the above samples according to the method of Engler. We used 300 cc. of crude oil, and carried on the distillation in 500 cc. glass distilling flasks. We collected the distillates in five-per-cent. fractions. The results of these determinations we will report in a later paper.

Judging from this preliminary work, the results seem to warrant the continuation of the examination of oils from other parts of the Kansas field.